

# IS FOOD WASTE COLLECTION AND MANAGEMENT ON THE HORIZON?

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# 48 Years of RCRA

“RCRA banned open dumping. It provided a comprehensive national program to encourage source reduction, recycling, and safe disposal of municipal wastes. What’s more, RCRA mandated strict requirements for treatment, storage, and disposal of hazardous waste...”

## **25 Years of RCRA: Building on Our Past To Protect Our Future**

Marianne Lamont Horinko

USEPA Office of Solid Waste and Emergency Response

# What's the big deal?

**“From Field to Bin: The Environmental Impacts of U.S. Food Waste Management Pathways”** USEPA Office of Research and Development October 2023

- “Over one-third of food produced in the US is never eaten, wasting the resources used to produce it and creating a myriad of environmental impacts from farm to table. Wasted food is the single most common material landfilled and incinerated in the United States, comprising 24% and 22% of landfilled and combusted MSW...”

# Here's the Worry

- An estimated 58% of the fugitive methane emissions (i.e., those released to the atmosphere) from MSW landfills are from food waste.
- An estimated 61% of methane generated by the food waste is NOT captured by the landfill gas collection systems and is released to the atmosphere.
- Food waste decays relatively quickly so its emissions often occur before the landfill gas collection systems are installed or expanded.

# One Last Point

- While methane gas emissions from MSW landfills are decreasing due to improvements in landfill gas collection systems, **methane emissions from landfilled food waste are increasing.**

# WHAT'S THE FIX FOR THIS?

- Mandate the separation of food waste from our mixed waste just like we do for yard waste, recycled materials and hazardous waste.
- **HMMM, return to the separate garbage man and trash man of the fifties?**

# SO, HOW DO WE GET THERE?

- To get the ball rolling we need a mandate for separate collection, processing and disposal of food waste. Who will issue that mandate?
  - Federal – US EPA
  - State – through environmental regulations
  - Local – through city or county ordinances

# WHAT GENERATORS WILL BE AFFECTED?

- Residential accounts for 55% of landfilled food waste
  - 41.3% from Single Family units
  - 13.7 from Mult-Family units (apartment houses and Condos)
- Commercial accounts for 45% of landfilled waste
  - Restaurants, cafeterias, supermarkets, etc.
- Not industrial such as:
  - Food processors



# INSTITUTE SEPARATE WASTE COLLECTION

- Require and/or provide separate leak proof containers
  - Single Family residential - Lidded rollout containers
  - Multi-family and commercial - Separate dumpsters
  - Match container type to collection vehicle type
- Consider frequency of collection
  - Once per week for single family residential
  - Multi-family and commercial twice per week
  - Large generators may need daily collection

# PROCESSING OPTIONS

- **Aerobic Digestion (a.k.a. Composting)**
  - Requires aeration for the biological process
  - Incorporate food waste into existing yard waste composting facilities
  - Separate exclusive food waste composting is rare
  - Encourage backyard composting mixed in with yard trash
    - Search “How to Compost – City of Orlando” video on YouTube
    - City residents will be provided a free composting bin at their request
  - Carbon Dioxide is the gas emitted by this process

# PROCESSING OPTIONS

- **Anerobic Digestion**

- Occurs within the landfill due to lack of oxygen –produces Landfill gas
- Wastewater treatment plants use in-vessel anerobic digestion to treat their sludge
  - This process can be modified to accept food waste
- Methane is the gas emitted from this process, which is typically captured and used for energy recovery

# What are the impacts to your MSW Program?

- **Collection Contracts**

- Minor impact to mixed waste collection
- No impact to yard waste collection unless food waste is added
- New separate residential and commercial food waste collection contracts needed

# What are the impacts to your MSW Program?

- **Landfill**

- Less tonnage due to loss of dense, heavy food waste
  - Less landfill tip fees may result
- Less generation of LFG may lead to less energy recovery revenues
- Reduced GHG emissions from the landfill

# What are the impacts to your MSW Program?

- **Yard Waste Composting facility**
  - Operating Permit modification required
  - Need to bulk food waste with wood chips before processing
  - Need to control odor, pests, and pathogens
  - Increased capital and operating costs

# What are the impacts to your MSW Program?

- **Management and Financial Impacts**

- Additional waste collection equipment and service costs
- New disposal equipment capital and operating costs
- Potential revenue losses from reduced tip fees and energy recovery income

# IN CONCLUSION...

- Will there be a food waste management choice or mandate in your future?
- If so, there are numerous considerations and steps necessary to get you there.
- I relied heavily on SWANA's April 2016 Applied Research Foundation report "**Food Waste Diversion Programs and their Impacts on MSW Systems**" which can be downloaded from SWANA's web site.